Exhibit 928-6

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application

Inventor(s): Thyagarajan Nandagopal et al.
Case: ALU/130080
Examiner: Le, Thu Nguyet T
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Title: MULTI-LEVEL ENMESHED DIRECTORY STRUCTURES

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APPEAL BRIEF

Appellants submit this Appeal Brief to the Board of Patent Appeals and Interferences on appeal from the decision of the Examiner of Group Art Unit 2162, mailed January 11, 2012, rejecting claims 1-20.

In the event that an extension of time is required for this Appeal Brief to be considered timely, and a petition therefor does not otherwise accompany this Appeal Brief, any necessary extension of time is hereby petitioned for.

The $620 Appeal Brief fee is being paid with the EFS Web submission of this Appeal Brief. Appellants do not believe that any other fees are due. In the event Appellants are incorrect, the Commissioner is authorized to charge any other fees to Deposit Account No. 50-4802/**ALU/130080**.

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Real Party in Interest

The real party in interest is Alcatel-Lucent.

Related Appeals and Interferences

Appellants assert that no appeals or interferences are known to Appellants, Appellants' legal representative, or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

Status of Claims

Claims 1-20 are pending in the application. Claims 1-20 were originally presented in the application Claims 1, 5-7, 9-10, 13-15 and 17-18 were amended. The rejection of claims 1-20 is appealed.

Status of Amendments

All claim amendments have been entered.

Summary of Claimed Subject Matter

Embodiments are generally directed toward a method for creating a multi-level enmeshed directory structure and a network management system. Specifically, one embodiment provides a method for generating a multi-level hierarchical database structure. The method includes the steps of selecting an initial data object; creating one or more descriptors associated with the data object wherein each of said descriptors are further associated with one or more corresponding descriptors thereby forming a multi-level relational tree; determining the relationship between the one or more descriptors; creating a hierarchical structure linking the different levels of descriptors; and updating a corresponding database.

The network management system communicatively coupled to one or more element management systems is adapted to perform a method for creating a multi-level hierarchical database structure. The network management system comprises a processor for executing software instructions received from a memory to perform thereby a method for, the method comprising: linking each of a plurality of data objects to multiple

respective descriptors, each of said descriptors being linked with one or more predecessor tags; and identifying a single descriptor that links a list of objects and two or more predecessor descriptors linking a single descriptor thereby establishing the relationships between different descriptors relative to themselves and to the initial data object.

For the convenience of the Board of Patent Appeals and Interferences, Appellants' independent claims 1, 6, 9, 13 and 17 are presented below with citations to various figures and appropriate citations to at least one portion of the specification for elements of the appealed claims.

Claim 1 recites (with references to illustrative portions of the specification added):

> 1. (Previously Presented) A method for generating a multi-level hierarchical directory structure and establishing relationships between descriptors, the method comprising:
>
> selecting an initial data object; [Pg. 2:11]
>
> creating one or more descriptors associated with the data object wherein each of said descriptors are further associated with one or more corresponding descriptors thereby forming a multi-level relational tree; [Pg. 8:24-25]
>
> determining the relationship between the one or more descriptors; [Pg. 7:25-31]
>
> creating a hierarchical structure linking the different levels of descriptors; [Pg. 8:1-12]
>
> updating a corresponding database; and [Pg. 9:14-16]
>
> identifying a single initial descriptor that links a plurality of descriptors and two or more predecessor descriptors linking another single descriptor to thereby establish relationships between different descriptors relative to themselves and to the single initial descriptor. [Pg. 12:4-14].

Claim 6 recites (with references to illustrative portions of the specification added):

> 6. (Previously Presented) A network management system communicatively coupled to one or more element management systems adapted to perform a method for creating a multi-level hierarchical directory structure and establishing relationships between descriptors, comprising:
>
> a processor for executing software instructions received from a memory to perform thereby a method for, the method comprising:
>
> linking each of a plurality of data objects to multiple respective descriptors, each of said descriptors being linked with one or more predecessor tags; and [Pg. 2:21-26].
>
> identifying a single initial descriptor that links a plurality of descriptors and two or more predecessor descriptors linking another single descriptor to thereby establish the relationships between different descriptors relative to themselves and to the single initial descriptor. [Pg. 12:4-14].

Claim 9 recites (with references to illustrative portions of the specification added):

> 9. (Previously Presented) A mesh network system comprising a processor, a network manager adapted to manage the mesh network and perform a method for creating a multi-level hierarchical directory structure and establishing relationships between descriptors, the method comprising:
>
> linking each of a plurality of mesh clients and nodes to multiple respective descriptors, each of said descriptors being linked with one or more predecessor descriptors; and [Pg. 2:21-26].
>
> identifying a single initial descriptor that links a list of mesh clients and two or more predecessor descriptors linking another single descriptor

thereby establishing the relationships between different descriptors relative to themselves and to the single initial mesh client. [Pg. 12:4-14].

Claim 13 recites (with references to illustrative portions of the specification added):

13. (Previously Presented) A computer readable storage medium for storing instructions which, when executed by one or more processors communicatively coupled to a network, perform a method for creating a multi-level hierarchical directory structure and establishing relationships between descriptors, comprising:

linking by a device an object to multiple descriptors describing said object, each of said descriptors being identified by one or more predecessor descriptors linked to the descriptor; and [Pg. 2:21-26].

identifying a single initial descriptor that links a plurality of descriptors and two or more predecessor descriptors linking another single descriptor to thereby establish relationships between different descriptors relative to themselves and to the single initial descriptor. [Pg. 12:4-14].

Claim 17 recites (with references to illustrative portions of the specification added):

17. (Previously Presented) A content server comprising a processor, said content server multicasting to a plurality of client servers in a network system adapted to perform a method for creating a multi-level hierarchical directory and establishing relationships between descriptors, the method comprising:

linking by the content server each of a plurality of client servers to multiple respective descriptors, each of said descriptors being linked with one or more predecessor descriptors wherein a top level predecessor descriptor corresponds to the content server; and [Pg. 2:21-26].

identifying a single initial descriptor that links a plurality of client servers and two or more predecessor descriptors linking another single descriptor to thereby establish relationships between different descriptors relative to themselves and to the single initial client server. [Pg. 12:4-14].

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

I. Claims 1-4, 6, 8-9, 11-13, 15-17 and 19-20 are rejected under 35 U.S.C. §102(e) as being anticipated by Liang (US 2008/0279273).

II. Claims 5, 7, 10, 14 and 18 are rejected under 35 U.S.C. §103(a) as being unpatentable over Liang (US 2008/0279273) in view of Schaepe et al. (US 2004/0148296, hereinafter Schaepe).

ARGUMENTS

I. Rejection Under 35 U.S.C. §102.

Claims 1-4, 6, 8-9, 11-13, 15-17 and 19-20 are rejected under 35 U.S.C. §102(e) as being anticipated by Liang (US 2008/0279273).

A.1. Claim 1.

Claim 1 is rejected under 35 U.S.C. §102(e) as being anticipated by Liang. Appellants urge to the contrary.

1. The Examiner Failed To Establish A Prima Facie Showing Of Anticipation Because Liang Fails To Teach Exactly What Is Claimed.

Appellants initially[1] show error in the rejection of claim 1 in that the Examiner failed to establish a factual basis to support the legal conclusion of anticipation[2]. (See MPEP §2131.03 (III)).

The Office Action fails to establish a *prima facie* case of anticipation, because Liang fails to teach exactly what is claimed in Appellants' independent claim 1 and with the required specificity as required by the rules. Specifically, contrary to the Examiner's suggestion, Liang does not appear to teach at least the following feature recited in the claims:

> "identifying a single initial descriptor that links a plurality of descriptors and two or more predecessor descriptors linking another single descriptor to thereby establish relationships between different descriptors relative to themselves and to the single initial descriptor"

The Examiner cites Figure 6, ¶¶0032, 0058 and 0062 for the proposition that Liang discloses the above feature. The Examiner is simply incorrect. The claimed element recites a different feature. The cited passages are reproduced here for ease of comparison.

> **[0032]** Accessed lid URIs provide a binding name and access scheme to the objects in the ATSC TSFS, as a lid URI embedded in an Initial Object Descriptor (IOD) is used to locate resources in the TSFS such as a BIFS scene description

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[1] See Response filed February 17, 2012.

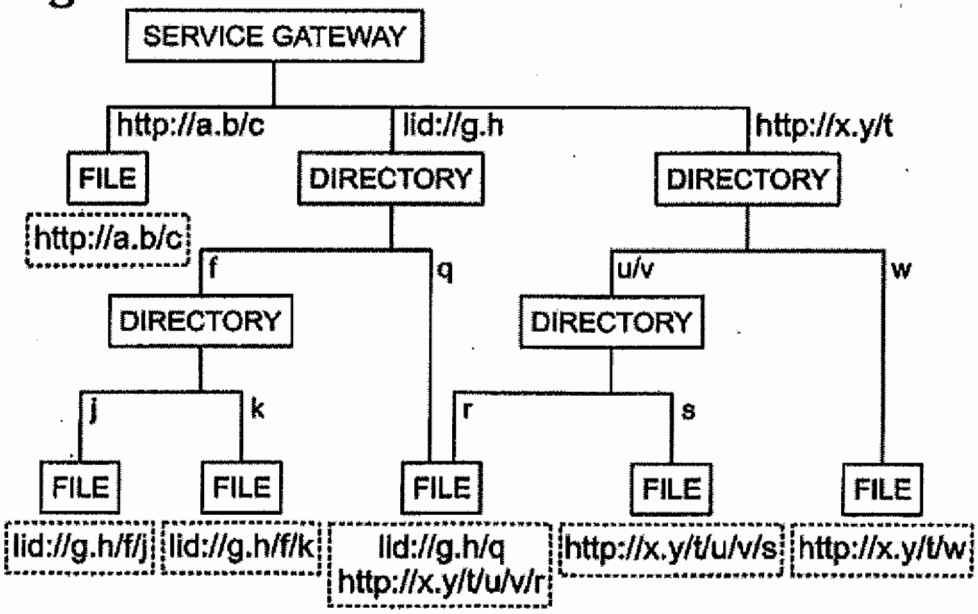
[2] According to MPEP §2131.03 (III) "Anticipation under §102 can be found only when the reference discloses exactly what is claimed and that where there are differences between the reference disclosure and the claim, the rejection must be based on §103 which takes differences into account. Furthermore, in order to anticipate the claims, the claimed subject matter must be disclosed in the reference with "sufficient specificity to constitute an anticipation under the statute." See MPEP §2131.03 (II). (emphasis added).

stream and/or an object descriptor stream. Receiving an MPEG-2 TS, with a packetized ATSC TSFS, means that MPEG-4 resources are formed in a hierarchical directory structure of BIOP objects including a DSM:: ServiceGateway, a DSM::Directory, and a DSM::File.

[0058] The APU 602 embeds MPEG-4 resources in an ATSC TSFS by forming the MPEG-4 resources in a hierarchical directory structure of BIOP objects including a DSM::ServiceGateway, a DSM::Directory, and a DSM::File (see FIG. 4). The APU 602 embeds MPEG-4 resources in the ATSC TSFS as follows: MPEG-4 resources are loaded into File objects; IORs for Directory and File Objects are created; the IORs are bound in a Service Gateway; an IOR is created for the Service Gateway; and, the Service Gateway IOR is located in a DSI message (see FIG. 5).

[**0062**] Returning to FIG. 3, although not shown, it should be noted that object descriptor can have a URL pointing to another object descriptor, elsewhere. The new object descriptor is referenced and associated with the objectDescriptorID of the original object descriptor carrying the URL string. The technique is applicable to both elementary stream and object descriptors. An elementary stream is used an example in the following discussion. However, the same analysis applies equally well to the object descriptors. As explained above, two approaches have been advanced for retrieving elementary streams: (1) via the ES_ID and the associated PID for the packets carried in the transport; and, (2) the present invention process of using URLs to reference streams carried elsewhere, such as over an IP network. However, the URL means is undefined in the ISO/IEC 13818-1 specification. The present invention defines the URL reference means, for accessing resources in a broadcast file system, over the Internet, and in local memory.

Fig. 6



In the Advisory Action, the Examiner contends:

> "Liang teaches the descriptors g.h and x.y/t which are predecessor descriptors and link to another descriptor "r" (fig. 6). Figure 6 also depicts relationships of different directories, files (descriptors) to themselves and to the Service Gateway (single initial descriptor)."

There is no relationship between the explanation and by proxy the prior art's disclosure that can be discerned. As can be seen, Figure 6 depicts a link http://x.y/t to a "Directory," with subdirectory u/v where file s is located such that the path to file s may be described as http://x.y/t/u/v/s. At least for the following reasons, Liang neither explicitly nor inherently teaches the claimed feature:

> "identifying a single initial descriptor that links a plurality of descriptors and two or more predecessor descriptors linking another single descriptor to thereby establish relationships between different descriptors relative to themselves and to the single initial descriptor"

Reason 1: While the Office Action relies on Fig 6 and ¶¶ 0032, 0058 and 0062 of Liang to disclose the above claimed feature, the claimed element recites a different feature.

In contrast to the above portion of present claim 1, the cited portions of Liang do not provide the basis for an anticipation rejection that can be discerned. Specifically, the feature requires a single initial descriptor that links a plurality of descriptors and two or more predecessor descriptors linking another single descriptor.

A better perspective of the claimed feature is obtained by referring to the specification. The MPEP makes clear that the intrinsic record (e.g., the specification) must be consulted to identify which of the different possible definitions is most consistent with the invention's use of the terms. See MPEP §2111.01 (III) quoting *Brookhill-Wilk* 1, 334 F.3d at 1300, 67 USPQ2d at 113 ("Where there are several common meanings for a claim term, the patent disclosure serves to point away from the improper meanings and toward the proper meanings.")

On page 6, beginning at line 27, the specification provides:

> FIG. 3 graphically depicts an Enmeshed Directory Structure of a file system according to one embodiment. Specifically, each of a plurality of objects denoted as 310-1, 310-2 and so on up to 310-12 (collectively objects 310) is linked to one

or 30 more of eight descriptors (A5-A8; B4-B7) at a first hierarchical level, denoted as level 320. Each of the descriptors at the first hierarchical level 320 is linked to one or more of six descriptors (A2-A4; B2-B3) at a second hierarchical level 330. Each of the descriptors at the second article level 330 is linked to one or more of two descriptors (A1; B1) at a third hierarchical level 340. The resultant enmeshed graph is an acyclic-relationship graph with all paths ending at an object. The intermediate nodes in the graph are descriptors, with the predecessor of each descriptor being a superset of the descriptor. The edge/link between the descriptor and its predecessor is denoted as a 'proper link', indicating that the descriptor is a 'proper subset' of its predecessor such that everything described by this descriptor is also described by the predecessor. Thus, a hierarchical descriptor structure is provided which can be used to describe objects in multiple ways.

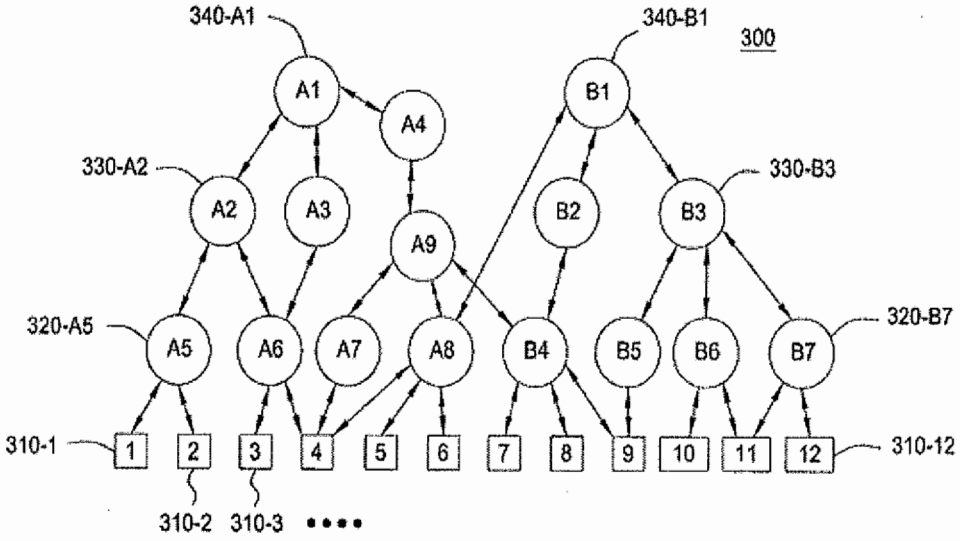


FIG. 3

Thus, the specification provides a clear context for persons skilled in the art to understand the claimed hierarchy. It is entirely appropriate when conducting claim construction, to rely heavily on the written description for guidance as to the meaning of the claims. Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but ***in the context of the specification***." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) (*en banc*). Indeed, the *Phillips* Court stressed that "the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Id.* at 1315 (quotation omitted).

As claimed, there are at least four levels to the hierarchy; namely, (1) an initial descriptor (e.g., 310-1 through 310-12) that (2) links a plurality of descriptors (e.g., A5, A6, A7, A8, B4, B5, B6 and B7) and (3) two or more predecessor descriptors (e.g., A2, A3, A9, B2 and B3) linking (4) another single descriptor (e.g., A1, A4, B1). In contrast, as the Examiner stated: "Liang teaches the descriptors g.h and x.y/t which are predecessor descriptors and link to another descriptor "r". The two structures are the polar opposites of each other. As articulated above, Liang Figure 6 depicts a link http://x.y/t to a "Directory," with subdirectory u/v where file s is located such that the path to file s may be described as http://x.y/t/u/v/s. This type of structure falls within the ambit of conventional directory structures, which typically associate an object with a unique descriptor (such as a filename contained in a directory). In contrast, the present embodiments are directed toward creating a multi-level enmeshed directory structure such as a multi-level hierarchical database structure.

At least due the above-described differences, the Office Action does not provide the basis for a case of anticipation of present claim 1.

Reason 2: Liang Lacks The Required Specificity Under 102.

Furthermore, in order to anticipate the claims, the claimed subject matter must be disclosed in the reference with "sufficient specificity to constitute an anticipation under the statute." See MPEP §2131.03 (II). (emphasis added).

As stated above, Liang teaches the descriptors g.h and x.y/t which are predecessor descriptors and link to another descriptor "r". Given that Liang teaches descriptors g.h and x.y/t which are predecessor descriptors and link to another descriptor "r", then the cited portion of Lang does not disclose at least "an initial single descriptor that links a plurality of descriptors and two or more predecessor descriptors" as claimed.

The Examiner does not account for the missing features. Accordingly, claim 1 is erroneously rejected as being anticipated by Liang. Mere allegation is not sufficient to support a prima facie case of anticipation.

Appellants have, thus shown that there are missing claimed features not taught or suggested by the cited reference; and thus, claim 1 has been erroneously rejected under 35 U.S.C. §102(e).

Reason 3: The Examiner Improperly Dissected The Claimed Element And Evaluate The Feature In Isolation.

Appellants respectfully submit that the rejection attempts to compensate for gaps and ambiguities in the teachings of the prior art by improperly dissecting the claimed element contrary to the MPEP, which provides in §2106(III):

> Finally, when evaluating the scope of a claim, every limitation in the claim must be considered. USPTO personnel may not dissect a claimed invention into discrete elements and then evaluate the elements in isolation. Instead, the claim as a whole must be considered. See, e.g., *Diamond v. Diehr*, 450 U.S. 175, 188-89, 209 USPQ 1, 9 (1981).

For example, in the most recent Office Action, the Examiner dissected the claimed element:

> "identifying a single initial descriptor that links a plurality of descriptors and two or more predecessor descriptors linking another single descriptor to thereby establish relationships between different descriptors relative to themselves and to the single initial descriptor"

into three disjointed parts such as "identifying a single initial descriptor that links a plurality of descriptors," "and two or more predecessor descriptors linking another single descriptor" and "to thereby establish relationships between different descriptors relative to themselves and to the single initial descriptor."

Having improperly dissected the claimed element, the Examiner then cites a specific portion of Liang (e.g., Fig. 6, ¶¶ 0032, 0058 and 0062), asserting that the cited portion of Liang discloses the limitation:

> "identifying a single initial descriptor that links a plurality of descriptors and two or more predecessor descriptors linking another single descriptor to thereby establish relationships between different descriptors relative to themselves and to the single initial descriptor"

Appellants object to this technique of breaking a claim element into small portions and try to use the cited reference to piece together teachings of those portions. In this case as in any case, a sufficiently fine-grained portioning of claim terms results in claim sub-terms in which all context is lost. Similar-sounding language within a reference is then pronounced as being equivalent to the sub-terms to effect thereby a teaching of the claim term. Further, the context and proper interpretation of the initial

claim term is simply lost using this analysis technique. Taken to an extreme, a claim term may be broken into individual letters, which letters are likely present in any reference. The presence of the individual letters in a reference does not mean that the initial claim term has been disclosed or suggested. As such, the claim as a whole was not considered.

Appellants submit that Liang merely addresses the carriage of MPEG-4 data in an ATSC MPEG-2 TS, using a uniform reference identifier (URI) and a transport stream file system (TSFS). See Liang ¶0030. The cited portion of Liang is devoid of any teaching or suggestion of an initial single descriptor that links a plurality of descriptors and two or more predecessor descriptors as claimed.

Thus, at least for these reasons, Appellants submit that Liang fails to teach or suggest an initial single descriptor that links a plurality of descriptors and two or more predecessor descriptors, as claimed in Appellants' claim 1.

Accordingly, for at least the reasons discussed above, Liang fails to teach or suggest exactly what is claimed in Appellants' independent claim 1. As such, Liang does not anticipate independent claim 1 under 35 U.S.C. §102.

Reason 4: Due To The Improper Dissection, Certain Phrases Are Not Accorded Patentable Weight.

According to MPEP ¶2143.03:

> ** "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

As articulated above, when the proper claim construction is used, Liang does not support the allegation for which it is cited. The Examiner glosses over the weaknesses and shortcomings of the reference in order to justify the rejection. There is no teaching relating to the specific features in Appellants' claim 1; namely,

> "identifying a single initial descriptor that links a plurality of descriptors and two or more predecessor descriptors linking another single descriptor to thereby establish relationships between different descriptors relative to themselves and to the single initial descriptor"

In order for the Examiner to entertain the proposition that Liang anticipates the above claimed features, apparently the phrases: "*a single initial descriptor that links a plurality of descriptors*," "*and,*" "*two or more predecessor descriptors linking another single descriptor*" "*to thereby establish relationships between different descriptors relative to themselves and to the single initial descriptor;*" were not accorded any patentable weight within the context of the claims. All words in a claim must be considered in judging the patentability of that claim against the prior art. (See MPEP §2143.03). One cannot divine claim meaning in a vacuum. *Philips v. AWH Corporation* (Fed. Cir. July 12, 2005).

Accordingly, because the Examiner's arguments in support of the §102 rejection fail, a *prima facie* case of Anticipation has not been established; and thus, independent claim 1 is allowable over Liang under 35 U.S.C. §102.

2. ***Conclusion***.

Appellants respectfully submit that there is no suggestion in Liang that would have resulted in Appellants' invention as provided in independent claim 1. Accordingly, independent claim 1 is not anticipated by Liang and is allowable under 35 U.S.C. §102.

A.2. Claims 6, 9, 13 and 17.

Claims 6, 9, 13 and 17 are rejected under 35 U.S.C. §102(e) as being anticipated by Liang. Appellants respectfully urge to the contrary.

As articulated above with respect to claim 1, Liang fails to teach exactly all elements of independent claim 1 as required under 35 U.S.C. §102 for establishing a *prima facie* showing of anticipation. Independent claims 6, 9, 13 and 17 recite at least some of the elements of independent claim 1 that are discussed above. Therefore, for at least the reasons discussed above, independent claims 6, 9, 13 and 17 also are patentable under 35 U.S.C. §102(e) over Liang.

A.3. Claims 2-4, 8, 11-12, 15-16 and 19-20.

Claims 2-4, 8, 11-12, 15-16 and 19-20 are rejected under 35 U.S.C. §102(e) as being unpatentable over Liang. Appellants urge to the contrary.

This ground of rejection applies only to dependent claims, and is predicated on the validity of the rejection under 35 U.S.C. §102 given Liang as applied to claims 1 and 10 above.

As articulated above with respect to claims 1, 6, 9, 13 and 17, there are missing claimed features not taught/suggested by the cited references – including:

> "identifying a single initial descriptor that links a plurality of descriptors and two or more predecessor descriptors linking another single descriptor to thereby establish relationships between different descriptors relative to themselves and to the single initial descriptor"

– and thus, dependent claims 2-4, 8, 11-12, 15-16 and 19-20 have been erroneously rejected under 35 U.S.C. §102(e). The Examiner failed to establish a *prima facie* showing of anticipation. Therefore, Appellants' claims 2-4, 8, 11-12, 15-16 and 19-20 are patentable under 35 U.S.C. §102(e) over Liang as applied to claim 1.

II. Rejection Under 35 U.S.C. §103

Claims 5, 7, 10, 14 and 18 are rejected under 35 U.S.C. §103(a) as being unpatentable over Liang in view of Schaepe.

This ground of rejection applies only to dependent claims, and is predicated on the validity of the rejection under 35 U.S.C. §102 given Liang as applied to claims 1, 6, 9 and 17 above.

As articulated above with respect to claims 1, 6, 9, 13 and 17, there are missing claimed features not taught/suggested by the cited references – including

> "identifying a single initial descriptor that links a plurality of descriptors and two or more predecessor descriptors linking another single descriptor to thereby establish relationships between different descriptors relative to themselves and to the single initial descriptor"

– and thus, dependent claims 5, 7, 10, 14 and 18 have been erroneously rejected under 35 U.S.C. §103(a). The Examiner failed to establish a *prima facie* showing of obviousness. Therefore, Appellants' claims 5, 7, 10, 14 and 18 are patentable under 35 U.S.C. §103(a) over Liang as applied to claims 1, 6, 9, 13 and 17.

Conclusion

For the reasons advanced above, Appellants respectfully urge that the rejection of claims 1-20 is improper. Reversal of the rejection is respectfully requested.

Thus, Appellants submit that all of the claims presently in the application are allowable.

Respectfully submitted,

Dated: 3/12/12

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CLAIMS APPENDIX

1. (Previously Presented) A method for generating a multi-level hierarchical directory structure and establishing relationships between descriptors, the method comprising:

selecting an initial data object;

creating one or more descriptors associated with the data object wherein each of said descriptors are further associated with one or more corresponding descriptors thereby forming a multi-level relational tree;

determining the relationship between the one or more descriptors;

creating a hierarchical structure linking the different levels of descriptors;

updating a corresponding database; and

identifying a single initial descriptor that links a plurality of descriptors and two or more predecessor descriptors linking another single descriptor to thereby establish relationships between different descriptors relative to themselves and to the single initial descriptor.

2. (Original) The method of claim 1, wherein each descriptor can be related to one or more predecessor descriptors thereby forming a hierarchical relationship.

3. (Original) The method of claim 1, wherein each descriptor can be associated with one or more predecessor descriptors and the relationship of the object to the one or more predecessor descriptors is acyclic.

4. (Original) The method of claim 1, further comprising determining the relationships between different descriptors relative to themselves and to the initial data object.

5. (Previously Presented) The method of claim 1, wherein the operation further comprises a graphical user interface (GUI) to navigate the enmeshed directory in both

directions, said GUI presents both descriptors or objects described by a particular descriptor using proper links and the descriptors describing the object or descriptor using proper links.

6. (Previously Presented) A network management system communicatively coupled to one or more element management systems adapted to perform a method for creating a multi-level hierarchical directory structure and establishing relationships between descriptors, comprising:

a processor for executing software instructions received from a memory to perform thereby a method for, the method comprising:

linking each of a plurality of data objects to multiple respective descriptors, each of said descriptors being linked with one or more predecessor tags; and

identifying a single initial descriptor that links a plurality of descriptors and two or more predecessor descriptors linking another single descriptor to thereby establish the relationships between different descriptors relative to themselves and to the single initial descriptor.

7. (Previously Presented) The system of claim 6, wherein the operation further comprises a graphical user interface (GUI) to navigate the enmeshed directory in both directions, said GUI presents both descriptors or objects described by a particular descriptor using proper links and the descriptors describing the object or descriptor using proper links.

8. (Original) The method of claim 6, wherein the relationships of the object to the one or more descriptors is acyclic.

9. (Previously Presented) A mesh network system comprising a processor, a network manager adapted to manage the mesh network and perform a method for creating a multi-level hierarchical directory structure and establishing relationships between descriptors, the method comprising:

linking each of a plurality of mesh clients and nodes to multiple respective descriptors, each of said descriptors being linked with one or more predecessor descriptors; and

identifying a single initial descriptor that links a list of mesh clients and two or more predecessor descriptors linking another single descriptor thereby establishing the relationships between different descriptors relative to themselves and to the single initial mesh client.

10. (Previously Presented) The mesh network system of claim 9, wherein the network manager further comprises a GUI to navigate the enmeshed directory in both directions, said GUI presenting both descriptors or objects described by particular descriptor using proper links and the descriptors describing the client or descriptor using proper links.

11. (Original) The mesh network system of claim 9, wherein the client is one of a radio node, a router, a gateway.

12. (Original) The mesh network system of claim 9, wherein the relationships of the client to the one or more descriptors is acyclic.

13. (Previously Presented) A computer readable storage medium for storing instructions which, when executed by one or more processors communicatively coupled to a network, perform a method for creating a multi-level hierarchical directory structure and establishing relationships between descriptors, comprising:

linking by a device an object to multiple descriptors describing said object, each of said descriptors being identified by one or more predecessor descriptors linked to the descriptor; and

identifying a single initial descriptor that links a plurality of descriptors and two or more predecessor descriptors linking another single descriptor to thereby establish relationships between different descriptors relative to themselves and to the single initial descriptor.

14. (Previously Presented) The computer readable medium of claim 13, wherein navigating the enmeshed directory in both directions requires the GUI, said GUI presents both descriptors or objects described by a particular descriptor using proper links and the descriptors describing the object or descriptor using proper links.

15. (Previously Presented) The computer readable medium of claim 13, wherein the relationship of the object to the one or more descriptors is acyclic.

16. (Original) The computer readable medium of claim 13, further comprising determining the relationships between different descriptors relative to themselves and to the initial data object.

17. (Previously Presented) A content server comprising a processor, said content server multicasting to a plurality of client servers in a network system adapted to perform a method for creating a multi-level hierarchical directory and establishing relationships between descriptors, the method comprising:

linking by the content server each of a plurality of client servers to multiple respective descriptors, each of said descriptors being linked with one or more predecessor descriptors wherein a top level predecessor descriptor corresponds to the content server; and

identifying a single initial descriptor that links a plurality of client servers and two or more predecessor descriptors linking another single descriptor to thereby establish relationships between different descriptors relative to themselves and to the single initial client server.

18. (Previously Presented) The content server of claim 17, further comprising generating a graphical user interface (GUI) to visualize navigation of the enmeshed directory in both directions, said GUI presenting both descriptors or clients servers described by a particular descriptor using proper links and descriptors describing the client server or descriptor using proper links.

19. (Original) The network system of claim 17, wherein each descriptor can be associated with one or more predecessor descriptors and the relationships of the client server to the one or more descriptors is acyclic.

20. (Original) The network system of claim 17, wherein the network further comprises a social network and the plurality of client servers comprise one or more end users.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.